IN THE TITLE:

Please amend the title as follows:

INK JET RECORDING HEAD ~~AND MANUFACTURING METHOD THEREFOR~~ HAVING PIEZOELECTRIC ELEMENT AND ELECTRODE PATTERNED WITH SAME SHAPE AND WITHOUT PATTERN SHIFT THEREBETWEEN

IN THE SPECIFICATION:

Please amend the specification as follows:

Page 1, before the first line, insert:

CROSS REFERENCE TO RELATED APPLICATION

This is a continuation of Application No. 08/788,959 filed January 24, 1997, allowed on March 26, 2003, the disclosure of which is incorporated herein by reference.

Paragraph bridging pages 2-3 and insert the following new paragraph:

That is, the part of the piezoelectric body, to which no electric field is applied, not deformed restrains the deformed part, lessening displacement of the entire piezoelectric body. If the upper electrode is not positioned at the width direction center of the piezoelectric film, namely, the widths of the undeformed parts of the piezoelectric film at the left $\Delta X1$ and right $\Delta X2$ shown in the Fig. 43 differ ($\Delta Xl > \Delta X2$, for instance), the piezoelectric film deformation becomes distorted, lowering the jet characteristic and stability. The same reference numbers in Figs. 10, 11 and 43 are used to designate the same elements.

Page 9, second full paragraph:

Fig. 11 is a schematic sectional view of ~~the actual~~a conventional ink jet recording head;

On page 12, sixth full paragraph:

Fig. 43 is ~~a~~another sectional view of ~~an~~the conventional ink jet recording head shown in Fig. 11 for explaining insufficient operations.

Paragraph bridging pages 16-17:

~~Fig. 10 shows the ink jet recording head formed by executing the steps. Since the ink jet recording head has the piezoelectric thin film 4 and the upper electrode 5 etched in the same dry etching process at a time, a pattern shift between both the piezoelectric thin film 4 and the upper electrode 5 does not exist; both comprises the same pattern. Therefore, in the ink jet recording head, an effective electric field is applied to the whole piezoelectric thin film and the piezoelectric thin film performance is sufficiently brought out, improving the jet characteristic as compared with the recording head in Fig. 11 wherein the projection area of the upper electrodes on the ink chambers 9, opposite to the common electrode surface is not the same as the area of the substantial planes of the upper faces of the piezoelectric thin films. Further, the ink jet recording head does not contain any undeformed portions and is free from lowering and instability of the jet characteristic caused by the upper electrode shift from the width direction center of the piezoelectric thin films.~~

Page 17, first full paragraph:

Next, another embodiment of the invention will be discussed. Fig. 12 shows a sectional view of an ink jet recording head. Diaphragms VP and BE are formed and attached so as to cover a groove-like ink chamber or pool IT separated by walls of a substrate SI. BE also serves as a common electrode of a piezoelectric thin film. In Figs. 12 and 13, and in the other drawing figures, DE and EDE indicate a silicon oxide film, which is the same as the silicon oxide film 2 in Fig. 9, for example.

Paragraph bridging pages 17-18:

When a voltage is applied to the piezoelectric thin of film of the structure, the diaphragms VP and BE just above the ink chamber are deformed convexly on the ink chamber side. Ink ~~as much as~~in an amount corresponding to the volume difference between the ink chambers before and after the deformation is jetted through the nozzle orifice NH, thereby enabling printing.

Page 18, first full paragraph:

In the conventional ink jet head structure, as shown in Fig. 42, the ~~diaphragm~~ thickness of the diaphragm/common electrode 103/105 is the same in the area attached to the piezoelectric thin film 104 and the area not attached to the piezoelectric thin film and overlapping the ink chamber ~~IT~~102 formed in the head base 1, so that a large displacement is not provided and the amount of ink required for printing is not jetted. The upper electrode is identified by reference number 106 and the corresponding lead line.

Paragraph bridging pages 23-24:

For example, the upper UE is made of Pt and is 100 nm thick, the piezoelectric thin film PZ is made of PZT having piezoelectric distortion constant d31 of 100 pC/N and is 1000 nm thick, the width of the upper electrode UE and PZ, Wpz, is 40 μm, the diaphragm BE also serving as another electrode is made of Pt, the thickness of the area attached to the piezoelectric thin film, td1 (Fig. 15), 800 nm, the thickness of the area not attached to the piezoelectric thin film, td2 (Fig. 15), is 400 nm, which is less than the thickness td3 of the area attached to the piezoelectric thin film, and the maximum displacement amount of the diaphragm is 400 nm. On the other hand, if the thicknesses of the diaphragm td1 and td2 are identical as 800 nm, when other conditions are the same, the maximum displacement amount of the diaphragm is 300 nm. Therefore, the embodiment enables a displacement to be provided 30% greater than was previously possible.